AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

194. (New) A method for identifying a compound that potentially elicits or modulates T1R1/T1R3 (umami) receptor-associated taste in a subject comprising:

(i) screening one or more compounds in a functional assay that detects compounds which activate the T1R1/T1R3 receptor or which modulate (enhance or inhibit) the activation of the T1R1/T1R3 receptor by another compound; and

(ii) identifying compounds that potentially elicit or modulate T1R1/T1R3 (umami) receptor-associated taste based on their (a) activation of the T1R1/T1R3 (umami) taste receptor or (b) modulation (enhancement or inhibition) of the activation of the T1R1/T1R3 (umami) taste receptor by another compound.

195. (New) The method of claim 194 wherein said T1R1 receptor is selected from the group consisting of rat T1R1, mouse T1R1 and human T1R1 and said T1R3 receptor is selected from the group consisting of rat T1R3, mouse T1R3 and human T1R3.

196. (New) The method of claim 194 wherein said T1R1 and T1R3 are of the same species origin.

197. (New) The method of claim 194 wherein said T1R1 and T1R3 are of different species origin.

198. (New) The method of claim 194 wherein said T1R1 is a human T1R1 polypeptide having the amino acid sequence contained in SEQ. ID. NO: 5.

199. (New) The method of claim 194 wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

200. (New) The method of claim 194 wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 95% sequence identity to the polypeptide contained in SEQ. ID NO: 5.

201. (New) The method of claim 194 wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 96% sequence identity to the polypeptide contained in SEQ. ID NO: 5.

202. (New) The method of claim 194 wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 97% sequence identity to the polypeptide contained in SEQ. ID NO: 5.

203. (New) The method of claim 194 wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 98% sequence identity to the polypeptide contained in SEQ. ID NO: 5.

204. (New) The method of claim 194 wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 99% sequence identity to the polypeptide contained in SEQ. ID NO: 5.

205. (New) The method of claim 194 wherein said T1R1 is encoded by the nutric acid sequence contained in SEQ. ID. NO: 8.

206. (New) The method of claim 194 which said T1R1 is encoded by a nutric acid sequence that hybridizes under stringent hybridization conditions to the nucleic acid sequence contained in SEQ. ID. NO: 8.

207. (New) The method of claim 194 wherein said T1R1 is a fragment of the polypeptide encoded by SEQ ID. NO: 8 that when expressed in association with a T1R3 polypeptide yields a T1R1/T1R3 taste receptor that is activated by umami taste stimuli.

208. (New) The method of claim 194 wherein said T1R1 comprises a fragment of the human T1R1 polypeptide contained in SEQ. ID. NO. 5 that when expressed in association with T1R3 polypeptide results in a heteromeric T1R1/T1R3 taste receptor that is activated by umami taste stimuli.

209. (New) The method of claim 194 wherein said T1R3 is a human T1R3 polypeptide having the amino acid sequence contained in SEQ. ID. NO: 7.

210. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide that possesses at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

211. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide that possesses at least 95% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

212. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide that possesses at least 96% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

213. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide that possesses at least 97% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

214. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide that possesses at least 98% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

215. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide that possesses at least 99% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

216. (New) The method of claim 194 which said T1R3 is a rat T1R3 polypeptide having the sequence contained in SEQ. ID. NO: 9.

217. (New) The method of claim 194 which said T1R3 is encoded by the nucleic acid sequence contained in SEQ ID. NO: 9.

218. (New) The method of claim 194 wherein said T1R3 is encoded by a nucleic acid sequence that hybridizes to the nucleic acid sequence contained in SEQ.

ID. NO: 9 under stringent hybridization conditions or hybridizes to a fragment thereof that when expressed in association with a T1R1 polypeptide results in a heteromeric T1R1/T1R3 (umami) taste receptor that responds to umami taste stimuli.

219. (New) The method of claim 194 wherein said T1R1 and T1R3 sequences are expressed in a cell.

220. (New) The method of claim 194 wherein said cell is intact or permeabilized.

221. (New) The method of claim 194 wherein said T1R1/T1R3 receptor is comprised in a membrane extract.

222. (New) The method of claim 219 wherein said T1R1 and T1R3 receptor sequences are expressed on the surface of said cell.

223. (New) The method of claim 219 wherein the cell is a eukaryotic cell.

224. (New) The method of claim 219 wherein the cell is a prokaryotic cell.

225. (New) The method of claim 223 wherein the eukaryote cell is a yeast, insect, amphibian or mammalian cell.

226. (New) The method of claim 224 wherein the cell is a CHO cell, COS cell, HEK-293 cell or Xenopus oocyte.

227. (New) The method of claim 219 wherein the cell further expresses a G protein.

228. (New) The method of claim 227 wherein said G protein is $G_{\alpha 15}$, $G_{\alpha 16}$ or gustducin.

229. (New) The method of claim 194 wherein said functional assay detects the effect of said compound on phosphorylation of said T1R1/T1R3 receptors.

230. (New) The method of claim 194 wherein said functional assay detects the effect of said compound on the internalization of said T1R1/T1R3 receptors.

231. (New) The method of claim 194 wherein said functional assay detects the effect of said compound on arrestin translocation.

232. (New) The method of claim 194 wherein said functional assay detects the effect on said compound on second messengers.

233. (New) The method of claim 232 wherein said second messenger is cAMP, cGMP or IP3.

234. (New) The method of claim 194 wherein said functional assay detects changes in voltage or intracellular calcium.

235. (New) The method of claim 234 wherein said functional assay includes the use of a voltage–sensitive or calcium–sensitive dye.

236. (New) The method of claim 194 wherein the functional assay detects the effect of said compound on G protein activation by said T1R1/T1R3 receptor.

237. (New) The method of claim 194 wherein said T1R1 and T1R3 sequences are linked to a reporter gene.

238. (New) The method of claim 237 wherein said reporter gene luciferase, alkaline phosphatase, or Beta-galactosidase.

239. (New) The method of claim 194 wherein said one or more compounds are comprised in a combinatorial chemical library.

240. (New) The method of claim 194 wherein said one or more compounds are comprised in a peptide library.

241. (New) The method of claim 194 wherein said one or more compounds are compounded in a randomized library of small molecules.

242. (New) The method of claim 194 wherein is a high throughout the screening method.

243. (New) The method of claim 194 wherein the functional assay screens for compounds that enhance or inhibit the activation of the T1R1/T1R3 umami taste receptor by L- glutamate.

244. (New) The method of claim 194 wherein the functional assay screens for compounds that enhance or inhibit the binding of IMP, GMP or an analog thereof to the T1R1/T1R3 umami taste receptor.

245. (New) The method of claim 194 wherein the functional assay screens for compounds that modulate inhibition of the T1R1/T1R3 umami taste receptor activity by lactisole.

246. (New) The method of claim 194 wherein said functional assay detects the effect of said compound on signal transduction.

247. (New) The method of claim 194 wherein said functional assay detects changes in cellular polarization.

248. (New) The method of claim 247 wherein said changes are detected by voltage-clamp or patch-clamp technique.

249. (New) The method of claim 194 wherein the functional assay is a GTPγ^{35}S assay.

250. (New) The method of claim 194 wherein said assay is a fluorescent polarization or FRET assay.

251. (New) The method of claim 194 wherein said assay detects changes in adenylate cyclase activity.

252. (New) The method of claim 194 wherein said functional assay detects the effect of said compound on ligand specific coupling of said T1R1/T1R3 receptor with a G protein.

253. (New) The method of claim 194 wherein said functional assay detects the effects of said compound on a transmitter or hormone release.

254. (New) The method of claim 194 wherein said T1R1/T1R3 taste receptor is stably expressed by a cell.

255. (New) The method of claim 194 wherein said T1R1/T1R3 taste receptor is transiently expressed by a cell.

256. (New) The method of which 194 wherein said T1R1 and T1R3 sequences are expressed under the control of an inducible promotor.

IN THE TITLE:

Please delete the current title and substitute the following

TITLE

- Functional Assays for Identifying Compounds that Modulate T1R1/T1R3 (Umami) Taste -